COGNITIVE

OUTDOOR SENSOR SPECIFICATIONS

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Enclosure

W= 224mm **H= 100mm** **L= 200mm**

Sealed weather-proof housing
(IP67 compliant)

Standard bolt template for flexible mounting to various fixtures such as poles, walls, etc. Specific brackets required for each mounting application. Tamper-resistant bolt heads.

Radio

Operating Frequency	680MHz to 4GHz
Radio Configuration	4 Receivers/1Transmitter Independent local oscillators for TX and RX 2 Independent frequency-synchronized diversity receivers (independent local oscillators per RX
Channel Bandwidth	200 KHz to 40MHz per receiver
Supported RF Bands	27 most used 3GPP bands 3 wide bands (no SAW filters) 2.4G/915M ISM bands
Receiver Maximum Input Power	Up to -5dbm in band/0dbm out of band
Sampling Rate	Maximum 104Msps (11 bits ADC)

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Radio Continued

Receiver Maximum Input Power	Up to -5dbm in band/0dbm out of band
Sampling Rate	Maximum 104Msps (11 bits ADC)
Transmitter	Cognitive transmitter at 2.4GHz ISM band (104Msps, 12 bits DAC, +15dbm max output power)
Supported Radio Protocols (Rx)	4G/LTE 3G/WCDMA Wi-Fi (802.11b/g/n) Bluetooth SPN-43 radar detector Other protocols under consideration
Location/GNSS	GPS+GLONASS
Digital Processing	8 IQ data channels(filtering, resampling, impairments compensation) 2 cores CSC proprietary control MCU 2 cores CSC proprietary VLIW/SIMD DSP ARM Cortex A8 host/networking MCU 512MB DDR3 SRAM 4GB eMMC flash memory

Legend

- N-type female connectors for external antennas with lightning protection
- RJ45 connector for network and Power-over-Ethernet
- N-type female connector for GPS antenna with lightning protection
- M4 grounding connection
- M8 mounting bolt holes (4)
- Pressure vent

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Communications

Network Interface	100 Base-T Ethernet over shielded RJ5 (with PoE) TCP/IP (DHCP configurable) Wi-Fi 802.11a/b/g/n, 2.4/5.8 GHz (optional)
Data Interface	Cloud-based RESTful API
Authentication	Hardware PKI (public/private keys) crypto-authentication engine (FIPS186–3 Elliptic Curve cyptography), 256 bit keys, TLS/HTTPS data transport

Power and Connectivity

External Physical Interfaces	100 Base-T Ethernet over shielded RJ45 (with PoE). 4 N-type female for radio ports (lightning protected) 1 N-type female for GNSS (lightning protected) External grounding nut on unit bottom for lightning suppression/grounding All connectors are bottom-mounted
Power	Power-over-Ethernet (48/24V, 802.3at Type 1 (802.3f)) 2 Watts (average) power consumption